June 8, 1953

Dear Dr. Kauffmann:

Thank you for your letter of June 4, just received. I am much obliged to you for the information provided.

It is very curious that SW-1047 should have acquired the I factor, while its parent (your #339) is I-. I believe there is some doubt, however, that this is necessarily a transduction of the I factor from S. typhimurium, as it may be possible that #339 will show a spontaneous form variation for this factor under some circumstances. ~~You will~~ note that while SW-948 is I+, its derivative SW-1048 is I- . [SW-1048 is a byproduct of an experiment in which SW-948 was exposed to phage grown on I IV V XII b:- (motile reversion of your #248)]. This could hardly be interpreted as a transduction.

We have been having a somewhat similar experience with S. abortus-equi. The details are obscure, but in some experiments IV V XII types have appeared, even, in one case, from IX XII a:1,5 --x IV XII (a):enx. But here too it will require a much more detailed study to determine whether a factor for the production of V is being transduced, or whether the potentiality for V is already inherent even in S. abortus-equi.

Although there is some precedent, perhaps, I would be somewhat surprised if the determination of somatic components were linked to that of the flagella. On the other hand, I am quite confident that substitution of somatic antigens could be accomplished quite readily if a direct selective method for somatic changes were applied.

I was especially interested at the diagnosis of SW-1048 (absence of XII_2). This seems to dispose of this fraction as the specific receptor of PLT22. However, the host range of this phage is still limited to organisms carrying some XII component.

Dr. Edwards will perhaps have told you that typical strains of S. gallinarum (like your 151-52) carry the complete gm antigen of S. enteritidis, as revealed by transduction to IX XII a:—. 151-52 differs from typical strains in its biochemical ~~eah~~ characters, as you described, and in its ability to transduce motility to #248.

Yours sincerely,

Joshua Lederberg